



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/805,798

03/22/2004

Justin K. Brask

ITL.0894D1US (P15193)

1055

7590

12/02/2004

Timothy N. Trop
TROP, PRUNER & HU, P.C.
STE 100
8554 KATY FWY
HOUSTON, TX 77024-1841

EXAMINER

MENZ, DOUGLAS M

ART UNIT

PAPER NUMBER

2824

DATE MAILED: 12/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/805,798

Applicant(s)

BRASK ET AL.

Examiner

Douglas M Menz

Art Unit

2824

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 36-46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 36-46 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input checked="" type="checkbox"/> Other: <u>Search History</u> . |

DETAILED ACTION

Specification

The abstract of the disclosure is objected to because of the phrase "in accordance with the invention..." in line 1. Correction is required. See MPEP § 608.01(b).

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 2824

Claims 36-44 are rejected under 35 U.S.C. 102(b) as being anticipated by Bernhardt et al. (US 53895964).

Regarding claim 36, Bernhardt discloses a semiconductor structure comprising:
a substrate (11) containing a germanium region, a metal contact (36); and a germanide layer (23 and 31) located between the germanium region and the metal contact (Figs. 4-6 and Col. 4, line 28 – Col. 5, line 19).

Regarding claim 37, Bernhardt further discloses wherein the germanide layer contacts the metal contact and the germanium region (Col. 5, lines: 1-19).

Regarding claim 38, Bernhardt further discloses wherein the germanide layer comprises a nickel germanide layer (Col. 5, lines: 1-19).

Regarding claim 39, Bernhardt further discloses wherein the germanide layer comprises a silicon germanide layer (Col. 5, lines: 1-19).

Regarding claim 40, Bernhardt further discloses wherein the metal contact (32) is associated with one of a source and a drain of a transistor (Fig. 6).

Regarding claim 41, Bernhardt discloses an apparatus comprising:

Art Unit: 2824

a transistor drain region (36), a transistor source region (37), a first metal contact (32A); a second metal contact (32B), a first germanide layer (23A and 31A) located between a germanium region of a semiconductor structure and the first metal contact; and a second germanide layer (23B and 31B) located between the germanium region and the second metal contact (32B, Figs. 4-6 and Col. 4, line 28 – Col. 5, line 19).

Regarding claim 42, Bernhardt further discloses wherein the germanide layer contacts the metal contact and the germanium region (Col. 5, lines: 1-19).

Regarding claim 43, Bernhardt further discloses wherein the germanide layer comprises a nickel germanide layer (Col. 5, lines: 1-19).

Regarding claim 44, Bernhardt further discloses wherein the germanide layer comprises a silicon germanide layer (Col. 5, lines: 1-19).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 45-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bernhardt et al. (US 53895964) in view of Chau et al. (US 6777759).

Regarding claims 45 and 46, Bernhardt discloses the apparatus of claim 41, however, Bernhardt does not disclose further comprising: a silicide region comprising a nickel silicide; and a transistor gate region in contact with the silicide region. Chau discloses a transistor structure (Figs. 1A-E) which has a silicide region (110) comprising a nickel silicide; and a transistor gate region (107) in contact with the silicide region (Figs. 1A-E and Col. 1). It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate Chau's silicide regions into Bernhardt's structure for the purpose of reducing the electrode's resistance as taught by Chau (Col. 1).


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Douglas M Menz whose telephone number is 571-272-1877. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Elms can be reached on 571-272-1869. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DM



MICHAEL S. LEBENTRITT
PRIMARY EXAMINER